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RESISTANCE TO DISEASE

DISEASE being victory for the disease germs over the host in the struggle for existence, there are only two ways of preventing it, reducing the striking power of the germs and increasing the resisting power of the host. Both are preventive steps if taken before disease breaks out, and curative after it begins. Of these two, the former step is difficult and almost always unsuccessful owing to the complexity of relations between the infective agents and the individual host and the consequent elusiveness of the whole affair. As regards the second step, it can be easily and successfully taken by every individual. The only difficulty in this matter is that there is a little misunderstanding about what makes a host resistant to germs.

Generally, it has long been believed that well nourished persons are more resistant to infection than those undernourished or wasted. But, "this belief", writes the editor of the Journal of the American Medical Association (11th July '42), " has been challenged repeatedly ". " Thus ", he continues, " even as long ago as the American Revolutionary period, Michael Underwood pointed out that infantile paralysis most often attacks the best nourished–" finest "–children. Peptor Rous in 1911 showed that undernourished fowls are relatively immune to sarcoma virus. More recently, T.M. Rivers has suggested a theory to explain " Malnutritional immunity " based on the assumption that under-nourishing cells are lacking in stored food materials necessary for the proliferation of viruses. Recently, D.H. Sprunt reported that prolonged fasting may cause a ten fold increase in the normal antivrial resistance of rabits provided the animals have free access to drinking water during the fasting period. He made careful quantitative studies on the susceptibility of rabits to inoculation with vaccina virus...(In a typical experiment) the 50 per cent point for well nourished control rabits had to be increased 9.3 fold for the fasted animals in order to produce the same results. The fasted animals, therefore, may be spoken of as being 9.3 times more resistant to vaccina virus than well-nourished

controls. Depriving rabits of food alone increased their resistance to vaccina virus, largely because such fasting is associated with increased amounts of interstitial fluids which result from free access to drinking water".

That prolonged fasting may be immunologically beneficial in certain virus infections if not accompanied by water deprivation is now evident.

The rationale, here, is that a fasting body is in want and so kept active and alert, and has the energy for assimilation and elimination spared for being used in resisting the invading germs. Such fastings when repeated a number of times every year,

Lady Teachers performing Lathi Drill Exercises under the auspices of Girgaum Viyayam Prakash Mandal, Bombay.

makes the body accustomed to subsist on nothing but water–a thing it has to resort to when a disease really breakes out. These fasts are something like the mock-fights a peace-time army indulges in to keep itself fit for the real ones. In fact, the best way of improving bodily resistance is to practise what we do if a disease really breaks out. In other words, the body should be kept in readiness for deprivation of food for days together as would happen during illness.

Similarly, the problem of mental resistance also should be tackled. The germs of mental disease are the ideas of security and stability of life. These should not be allowed to take root in the mind. Because, any slight disturbance in the *Status Quo* may shock the individual. "The idea of security and stability" says E. Fretson Skinner, M.A., M.S., F.R.C.P., writing on war neuroses in the Clinical Journal, "is so firmly rooted in our (British) minds that its contradiction has come as a shattering blow bringing with it a sense of unreality and creating a feeling of uncertainty in the minds of many...Many cases of psychological illness in people over 50 have resulted in mental shock of realising that some thing that they had hitherto considered completly stable has suddenly become a doubtful stability....A neurosis is a state of mind which makes its owner unable to face reality".

In short, training both body and mind to face any eventuality at any time increases the resistance power of the host. This should not be confused with hygiene which stands for reducing the striking power of the germs.

TUBERCULOSIS AND HOUSING ACCOMMODATION

BY DR. A.K. SARKAR, M.B., D.P.H., District Health Officer, Faridpur.

The influence of housing is shown by the fact that the mortality from tuberculosis was found to be more than ten times as much great in crowded areas in Paris as in houses surrounded by open spaces. Of course, other factors must have been at work in this case as the inhabitants of houses in crowded areas are likely to be poorly nourished as well as badly housed. Granted, however, that the nourishment is adequate, it is quite true that—" A healthy dwelling is in itself a sanatorium ". If any case of tuberculosis be found out in any congested bastee, he cannot be accommodated in any isolation hospital or sanatorium at the present situation in most of the cities in India, but it has been observed that even while accommodated in a suitable room or a verandah with care to keep it neat and clean, the outlook is changed and gradually such cases recover or get much relieved. So, every care should be taken to have necessary suitable accommodation for sleeping and resting of all people to avoid infection. Sir John Megaw again pointed out an interesting and important fact that 100 days' treatment in a sanatorium costs £ 30 whereas with the same amount, good treatment at home can be provided for two years and a half (912 days). It is evident that when funds are limited, much more can be done for a given expenditure of money by improving the conditions of the home and by providing a separate room or verandah for the patient. He has also stated that in Sheffield, special houses are provided for families in which there is a tuberculous patient, these have a room with a verandah and the cost is £ 10 yearly for each family. It is, therefore, evident that 12 persons can be treated in this way for the same expenditure as would be incurred by treating one person in a sanatorium.

2. From the point of view of practicability, it is quite clear that the tuberculosis problem of India cannot be solved by sanatoria or hospitals. Home treatment under proper supervision is the only method which comes within the range of practical politics. This view has also been supported by Rai Bahadur Dr. G. C. Chatterjee M.B., of Calcutta, in his book " Tuberculosis and its Treatment by Home Sanatorium Method." He has observed good results in many of his Calcutta cases even in congested bastees by providing a separate room or a verandah where light and air can have easy access. The writer claims to have similar experiences during his practice in Calcutta and while in his service as a Sanitarian in the towns and villages. It has been also noticed that tuberculosis cases, when properly diagnosed and kept at the village homes in a thatched house in open air, improve more rapidly if they attend to the instructions.

3. Active tuberculosis is found to be definitely associated with certain environmental conditions *e.g.* poverty, over-crowding, malnutrition, ill-education, ignorance etc. Thus two definite factors play a part in the production of tuberculosis :—(1) Infection. (2) Environment.

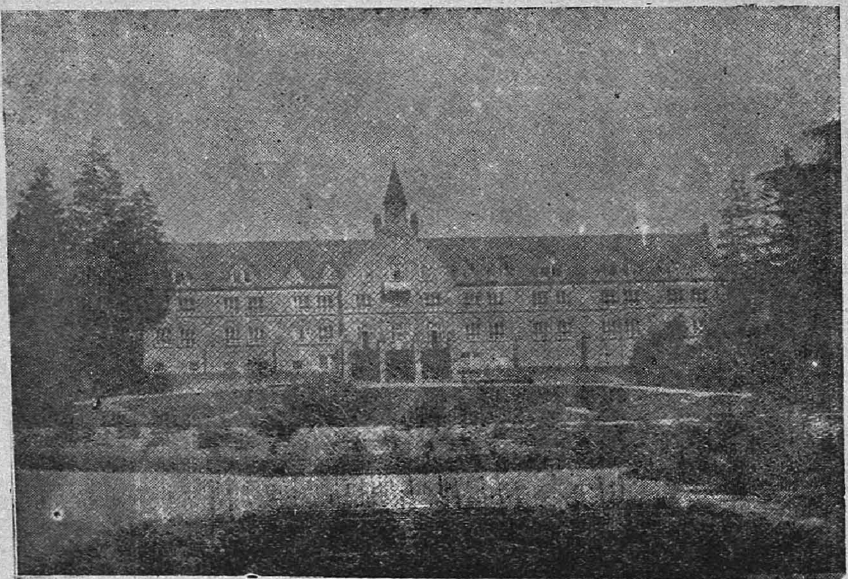
Dr. Broadway, who recently studied the relative importance of various environmental conditions and causal factors in tuberculosis, came to this conclusion :—

> " The evidence submitted has sufficient statistical value to establish beyond reasonable doubt that

over-crowding is a factor of definite importance in contributing to the prevalence of tuberculosis".

It has also been shown statistically that infection attacks only 1.3% of persons in contact with a tuberculous individual in healthy dwellings as compared with 4.9% in unhealthy dwellings. Again, when the dwellings are both unhealthy and over-crowded, the chances are very much greater, necessarily in order to avoid big and repeated doses of it, everybody must dissociate himself from conditions with which the disease is so intimately bound down. Therefore, improvement in housing conditions not only improves the health but increases the general resistance of the body and thus reduces the chances of infection, Realising such facts in the civilised countries of Europe and America, they gave due importance to healthy dwellings as a preventive measure against tuberculosis and, in spite of industrialisation and urbanisation, these countries have shown a rapid decline in tuberculosis mortality.

4. With the object of having good environmental conditions, house inspections are carried out more vigorously in England and slums are being cleared at a cost of millions of pounds. Well over a million houses are inspected every year by the Health Authorities and improvements effected wherever found necessary. Housing schemes are also being carried out in France, Italy and other countries abroad. In Paris, 78000 houses have been built including 52,000 of inexpensive type. The Municipality of Vienna has built 64,000 new working class dwellings since the war. In Naples, healthy dwellings have been provided for 3,00,000 slum dwellers. In Rome, the housing scheme has involved a capital expenditure of nearly 500 million liras. All those schemes have amply justified the expenditure and reduced the mortality from tuberculosis. In India, the conditions, are quite otherwise. So, instead of having a decline



Skorping Sanatorium, Denmark.

From the curative point of view, a well designed sanatorium treatment, plays a major role in the effective control of tuberculosis.

in mortality due to tuberculosis, it is gradually increasing. With similar object in view, the Improvement Trust in Bombay, constituted in 1898, has shown a notable step in advance, and up to the end of 1913, the Trust had incurred an expenditure of 488 lakhs of rupess towards housing schemes having broad roads through the heart of the city, slum areas have been abolished and dwellings provided for the accommodation of the poorer classes. Though the Calcutta Improvement Trust was constituted in 1911, the work is going on slowly, while innumerable delapidated and insanitary houses are left out uncared for; the Sanitary Officers seem to be either very lazy or overworked in some way or other to neglect such works favouring the spread of infection in the heart of the city by all means. The Trust should take up their works more vigorously, and the Public Health Authorities of the Calcutta Corporation will be pleased to improve the existing condition by all possible means, as it is noticed that during the last 25 years, rarely any appreciable improvement could be effected in Public Health affairs though the population has actually doubled within the last 30 years. The funds for such great projects have been provided from the local taxation and municipal contributions. These have also been supplemented by the Imperial Grant of Rs. 50 lakhs in the case of each city taking up such works, while, in the case of Calcutta by a further recurring grant of Rs. 1½ lakhs for 60 years. A similar scheme of driving a broad road from New Delhi right through the heart of Old Delhi costing of Rs. 22 lakhs is completed. During his tour in northern India within the last decade, the writer had noticed most of them in sanitary conditions, specially in Benares, Cawnpore, Lucknow and Agra. They have all provided for pure water and drainage, but otherwise, the sanitary conditions are so very hopelessly neglected that tuberculosis is sure to make a rapid progress in every one of them. Schemes like those of Bombay and Calcutta have been carried out, though on a minor scale, in Lucknow and Cawnpore also, but as a rule, our municipalities have sadly neglected the housing schemes in most cases. Observing similar conditions, Dr. A. R. Mehta, the previous Organising Secretary, King George Thanksgiving Fund, Delhi, has rightly suggested that to fight out this disease, improvement in housing conditions is of primary importance and must be effected. The writer agrees with him. This object can only be achieved on the following principles :—

(1) By dealing with existing buildings by demolition and improvement on the suggestions of Public Health and Sanitary Engineers' report, but it is regretted that, in these days of autonomy, this is very seriously neglected in all municipalities in India as they have no intention to give the nations a chance to exist in a better condition.

(2) By controlling the construction of new buildings and roads either (*a*) by municipal action or (*b*) by private action—on persuasion and educating the masses.

According to Dr. Mehta, 75% of the houses in our cities are unfit for healthy human habitation, as they are all dark, ill ventilated, damp and dilapidated while people have just got used to live under such conditions, necessarily ill health and sickness are accepted as a part and parcel of one's being, the only consolation being philosophical resignation to Fate. It is certain that to improve these existing defects requires a bold policy on the part of the local authorities, while the local Government must put in sufficient pressure. In such a transaction, these local authorities and the Governments will probably lose in the beginning, but not very much, while the value appreciates considerably, and whatever the loss it will

be amply repaid by improvement in the health of the people. With these objects in view, the local authorities will be serious to take up the scheme on approved lines immediately, while the Government will take up the initiative to set an example for such local authorities.

5. In India, The King George's Thanksgiving Fund is available to render necessary assistance for the control and precaution of tuberculosis in the towns and villages and provincial tuberculosis associations have also been formed, while money is being collected from all concerned to give aid to the poor tuberculous patients to control the spread of such fell diseases. Now, in order to isolate all such open cases of tuberculosis, the Health Authority requires legislation, and the Government of Bengal may be pleased to enforce the Indian Epidemic Diseases Act with a suitable set of regulations for the control of such dangerous infective diseases. On the basis of the Circular letter issued in 1932 by the then Surgeon General with the Government of Bengal, the Medical Officers in charge of Charitable Dispensaries are required to maintain a register with all particulars regarding all suspected cases of tuberculosis and to send copies to Health Department immediately. On receipt of such report, the Sanitary Inspector in charge of Municipality or Rural Health Circle may visit such houses to give advice to the patient and to the house owner separately for having the case under the strict supervision of some Registered Medical Practitioner, and to isolate such cases in a separate room for the safety of the other inmates of such house. Such visiting staff should be provided with visiting cards —one for each patient to keep notes as regards the history and the progress of such disease. If necessary, Isolation Camp may be provided by the local U. B. or Municipality or D.B. just on the side of some existing Charitable Dispensary where supervision can be had easily. The Bengal Tuberculosis Association may be requested to depute their experts to diagnose such cases and to depute Tuberculosis Health Visitor to take particular care of such cases for educating the affected family and the mass for the prevention of the disease. The Director of Public Health, Bengal, may kindly ask all the Assistant Directors of Public Health to take special care whenever they visit any town or Rural Health Circles, where records are kept for all such cases. But a Tuberculosis Special Officer should be deputed to make a systematic survey to find out all such cases to bring them under regular observation. It has also been noticed that questions on Tuberculosis are being put in the Legislative Assembly, but no effective steps have yet been taken up for the control and prevention of the disease. Provision should be made in the Budget to do something, thought best by the authorities concerned, and systematic propaganda may also be conducted through the National Welfare Unit now introduced, but they are to work according to the program to be drawn up by the District Health Officer in consultation with the District Magistrate, if the authority desires to have any effective works from such organisation, while such a party should be given a popular shape, as people are rather suspicious regarding their activity and usually avoid to attend to their lectures.

In conclusion, the kind attention of the Chairmen of all Municipalities and District Boards, the Director of Public Health and of the Hon'ble Minister in charge of Medical and Public Health Department is drawn to such a serious problem to take immediate step, as there is a great apprehension of a serious loss of population and rendering many an innocent life quite invalid thus bringing in a sure economic loss to the country which can yet be prevented.

RURAL MALARIA

A PUBLIC HEALTH PROBLEM

BY DR. B. ANANTHASWAMY RAO. B.Sc., M.B., B.S., M.Ph.,
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MALARIA is such an insidious disease that till recently its importance as a major Public Health problem had been hardly recognised. The disease is not by any means new, as there are numerous references to it in ancient records of many countries. But precise knowledge in regard to its causation, life cycle of the causative organisms and the method of transmission is more recent. The epoch making discovery by Sir Ronald Ross, that malaria in birds is transmitted by a species of mosquitoes opened up an enormous new field for research and was quickly followed by the demonstration of the transmission of human malaria by different species of anopheline mosquitoes.

This discovery was soon followed by field trials and in 1901, Sir Malcolm Watson demonstrated the possibilities of this discovery by the successful control of malaria in Port Swetenham, Malaya. The completion of the gigantic Panama Canal scheme was mainly possible on account of the brilliant works of General Gorgas in controlling the intense malaria in the canal zone. These outstanding examples were soon followed by numerous attempts at urban malaria control in several parts of the tropical world, resulting in the economic exploitation of intensely malarious countries like Malaya, Java, Philippines etc. Studies on the malaria problem in India were soon started and methods were developed for its control in isolated areas commencing from Mian Mir.

I. **Methods of Control.**—1. *Treatment of Infected Persons:*—Control of malaria by the use of drugs alone has not yielded satisfactory results, except in the case of small population groups under control. This is due to (1) the long courses of treatment necessary for the permanent cure, and (2) the absence of a drug that will prevent infection from mosquito bites.

But effective treatment, combined with other anti-malaria measures is definitely helpful, as it minimises the chances of mosquito infection.

2. *Protection of Healthy Individuals:*—In the absence of drugs to prevent infection the protection of individuals from the disease is possible only by prevention of mosquito bites. This can be done by screening of houses and the use of certain essential oil preparation for repelling the mosquitoes. But obviously, both the above measures have limited application.

3. *Control of Mosquito Carrier* :—Control of the mosquito carrier is the only method which offers consistent results in the control of this disease in a community. There are several methods by which the mosquito carrier can be controlled and can be listed under two separate groups :—

(*a*) Methods against the adult mosquitoes, *viz.*, traps, insecticidal sprays and screening.

(*b*) Methods against larvae, *viz.*, drainage filling, use of larvicides and naturalistic methods.

The measures indicated above have been used either individually or in combination for the control of malaria in urban areas. Compared to the immensity of the problem in this vast sub-continent, the efforts so far made for the control of this disease has been limited to urban areas mainly. The vast bulk of the population in India

is essentially rural and the rural malaria problem has not yet been touched. This is not because rural malaria is any way different in epidemiology to urban malaria, but seems purely an economic question. The measures available till recently were not within the means of rural population units. Informed opinion held that the control of rural malaria under Indian economic conditions was almost impossible. But recent work under these conditions affords hopeful signs of relief for this much afflicted mass of humanity—real India.

II. **Measures for the Control of Rural Malaria.**—It is not possible to draw up a standard scheme for the control of malaria as the problem is so diverse and varied depending on the habits of the mosquitoes and even the mosquito species themselves vary with the locality. For outlining a skeleton scheme, however, the whole malaria problem can be classified under two headings:—

(1) Riverine or foot-hill malaria, and (2) Man-made malaria.

1. *Riverine or Foot-Hill Malaria:*—This type of malaria is natural to foot hill regions, with natural streams.

Insanitary surroundings of human habitations in rural parts also form convenient strongholds for Malaria.

The types of mosquitoes responsible for transmission in such areas are running water breeders having special preference for sun light. It is in the control of such malaria that naturalistic methods have been most helpful. These mothods include, shading, sluicing or flushing by using automatic or hand operated syphons.

2. *Man-made Malaria:*—A very large portion of malaria in the plains is man-made and avoidable. This is largely due to uncontrolled irrigation and interference with natural drainage in the course of road and railway developments. Almost the whole of this malaria problem can be avoided by educating the engineer, to be malaria-minded. The engineer should be fully conversant with the habits of mosquitoes in the area he is working and much of the future malaria could easily be avoided by his attention to the alignment of irrigation channels with reference to inhabited villages, alignment of roads and railways with due regard to drainage.

III. **Irrigation and Malaria.**—India is essentially an agricultural country and abounds with numerous and magnificent irrigation projects. It is most unfortunate that the one constant sequence of almost every irrigation project, *i.e.*, Malaria, has hardly evoked any interest on the part of the profession to learn by previous experience and avoid this scourge. Almost every project, big or small, has been conceived and executed with no attention to drainage, resulting in water-logging and malaria. The engineers have consistently been satisfied with taking water to the land and never to take the excess water off it. In every instance, the designers of these projects have been impelled with quick and maximum returns, but so far no attempt seems to have been made at checking the profit and loss account based on human values. Studies of the malaria problem in irrigated areas indicate the following preventive measures:—

1. An expenditure of at least 10 per cent of the capital cost of the project for drainage. There should be adequate recurrent provision for maintenance.

2. A minimum dry belt of two furlongs round every population group or village.

3. Conservation of water and minimising the malaria hazard by developing intermittent irrigation, suitable paddy selections can be used to grow under these conditions.

IV. **Spray-killing of Mosquitoes.**- While the measures discussed above depend largely on the re-orientation of several technical agencies, the measure that offers immediate hope to the suffering millions in the villages is the spray killing of adult mosquito by pyrethrum extract. This extract is prepared from pyrethrum flowers which now is mostly imported. This extract is sold as 'Pyrocide 20' or 'Pyefly', but with the flowers made available can easily be prepared locally at a fraction of the cost. This extract diluted with kerosine and sprayed into every living house and cattle shed once, or twice a week, effectively prevents malaria. This has now been fairly widely tested and offers the cheapest anti-malaria measure for rural areas. Efforts are now being made for growing pyrethrum on a commercial scale in India, and it requires a tremendous drive before it can be made available in the quantity that will be required if relief is to be afforded to a large part of rural India. Malaria is so wide-spread and commonplace, that there are as many remedies and preventives suggested as there are people suffering from it. But a successful drive against malaria on a large scale can only be possible with proper organisation and trained direction. There are several instances of waste of public funds in attempts at controlling the disease, ambitiously conceived, but ill-directed by untrained personnel. A central agency for each area is very necessary to direct and co-ordinate local effort. This central agency should consist of fully trained personnel consisting of a group of malariologists and entomologists.

Such a control agency should,

(1) train the required personnel for field work in local areas,

(2) undertake preliminary survey of the entire area under its control. Such a survey should aim at collecting complete data on the incidence and distribution of malaria, local anopheline forma, their habits, distribution and relation to local malaria transmission etc.,

(3) start demonstration control units in representative areas to assist in educating local opinion. Such effective demonstrations will be most helpful in building up the necessary support,

(4) arrange for systematic propaganda. This propaganda should be by picture shows, talks and popular articles. This scheme of education should be extended to include allied professions, whose active co-operation is essential such as engineers and medical men as well as agencies, who have to pay for the work. An effective propaganda should be able to create a volume of public opinion to demand this relief and a keenness on the part of the administration to find the requisite funds. Setting up of health leagues and malaria societies should be encouraged to educate the villagers, who must realise that any preventive undertaken is on his behalf, and

(5) introduce suitable legislation to give the field worker legal sanction for enforcing the required measures, when necessary.

The Teething Time of Children

A SOURCE OF WORRY TO THE NEW MOTHERS

By

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THE teething time is one of the most important mile stones of human life. Everybody has to cross it, and the new mother must be well prepared for this stage of journey of her child, as otherwise she may have to pass a period of constant worry. The normal time for cutting of milk teeth begins from 5 to 10 months and generally ends at the end of 30 months. The first pair of teeth to cut is the lower central incissors, which appear between the 5th and 10th months,and the last pairs of teeth are the upper and lower molars, appearing between 24 and 30 months, thus making up the total number of 20 milk teeth in all. There is lot of variations in the time of appearance of these teeth even in normal infants. Some of them show their first tooth even in the 4th month, while others apparently healthy, show no teeth till the 9th or the 10th month. Both unearly and unusually late dentition seems to be a family trait in some cases.

Teething time as an explanation of symptom is too often a cloak for ignorance. Though a physiological process, it often causes a general disturbance of health of a normal child, though there are infants who cut their teeth without the slightest disturbance of health. The disorders have been attributed to the discomfort due to tension of gums, and also to the excitability of nervous system.

It is a matter of common observation that at the approach of dentition, the infant crams its fingers into his mouth and attempts to bite any object within reach, perhaps due to a tickling sensation in the hardening gums. There is an increase of saliva and the infant begins to drivel. It becomes fretful, sleeps badly awaking with a cry and due to disturbed sleep looks ' out of sorts '. It often plucks at its ears, or at the hairs over its temples, and beats its head with the fist.

A very common result of teething is the lack of appetite. The infant refuses some feeds entirely, immediately before and sometimes for a long time during dentition. It, at least causes a great anxiety to the mother, though it is harmless. There is a failure to gain in weight or diminution of rate of gain, and the progress of weight is apt to be irregular.

Diarrhœa is a common occurrence, the stools being characteristic, as they are greenish in colour and do not contain undigested particles. The most important point about this diarrhoea, is, as observed in hospitals, that the infant does not fail to gain in weight inspite of it. This does not respond to dietetic measures, unlike other diarrhoeas.

Some infants have occasional attacks of vomiting coming on without apparent cause, with little or no disturbance of the bowels. The vomits consist more of solid matter. This symptom vanishes automatically after each eruption and probably mechanical in nature.

Some children show a slight rise of temperature say about 100°F., preceding the dentition without any other ascertainable cause of the fever.

The cough which sometimes comes up as a symptom is not due to bronchitis but due to saliva flowing to the back of pharynx. The child coughs at intervals in the night when placed on its back.

Some infants show a tendency to convulsions, with upward rolling of the eyes but it generally occurs in abnormal children, who are mentally defective.

Infants prone to eczema have an acute stage of this disease during each eruption, but it clears up totally after the dentition.

Violent screaming without apparent cause, has been seen in some, and it might be due to pain of neuralgic character in dentition and the infant is restless, with the face often flushed.

The delayed dentition in children may be caused by various abnormalities. Presence of 'rickets' is one of the most important causes, as it gives rise to defective calcification of bones, and teeth. Some forms of mental deficiency, such as Mongolian imbecility, give rise to delayed teething, both in the time and order of dentition.

The most important thing the mother should look after is the diet of the child. Fresh air, sunshine, proper and well-balanced food with vitamins, will ensure cutting of teeth in proper time. Cod-liver-oil or Halibut liver oil in some form or other should be administered. A purge for a few days will be very useful, such as grey powder at bed time with a little milk of magnesia first thing in the early morning. "Agarol" in infant's dose is also useful. To prevent rickets an egg spoonful of cod-liver-oil emulsion should be given immediately before the three feeds throughout the period of dentition.

The doctor has a great responsibility of diagnosing a case of teething only after excluding all other diseases. Pink disease, which mostly occurs in Western countries, has been often mistaken for a case of teething, as the former is also common between 9 months and 2 years of age, though it can be detected fully in later stages when characteristic rash appears and by the "raw beef hands".

Smoking in Wartime.

In normal times many persons smoke tobacco, especially cigarets, to excess. During the war the habit seems to be much increased. In the *Times* a physician, Sir Maurice Cassidy, says in a communication that nobody who travels by road or rail can fail to be impressed by the amount of smoking in the fighting services. Most of the men seem to have an unlimited supply of cigarets, which they never cease to smoke. When he asked if any attempt was made to curb their addiction they told him that it is very difficult not to smoke as much as they do and that a lecture generally begins with the words "You may smoke," when everybody automatically lights a cigaret. Now these men are being trained to fight for their lives. Yet were they being trained for a soccer cup tie or a boat race their smoking would be seriously restricted, if not stopped. The cigaret impairs the oxygen carrying capacity of the blood by the carbon monoxide inhaled. At the same time it often ruins digestion and diminishes resistance to respiratory infection. We are rationed in meat, milk, eggs, sugar, butter and clothing. Surely, says Sir Maurice Cassidy, the time has come to ration tobacco and thereby increase our efficiency. —*Jour. A. M. A.*

YOUR ANATOMY, PHYSIOLOGY AND PHYSICAL EXERCISES

By

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THE study of the various parts which make up the body is known as anatomy, and the study of the work which has to be performed by each of these various parts is known as physiology. Each of the definite parts of the body which differs in both structure and function from the other parts is known as an organ such as the heart or the stomach. The organs consist of parts which differ one from another and these various parts making up an organ are known as *Tissues.* These tissues of the body are made up of various chemical elements such as gases, oxygen, hydrogen, nitrogen, chlorine and fluorine, and the non-metallic solids carbon, sulphur and phosphorus, and the metals sodium, potassium, calcium, magnesium and iron.

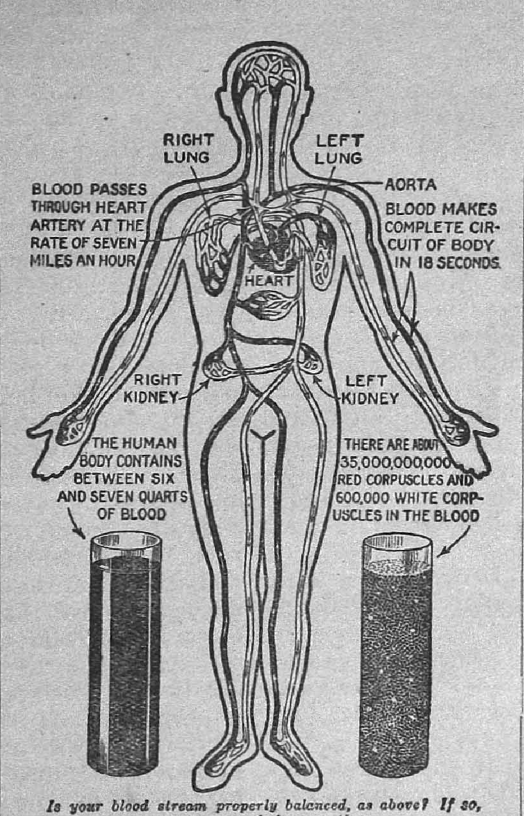
Mental work is performed by one part of the body called the *Nervous system,* and muscular work by another part known as the *Muscular system.* The master tissues of the body are the muscular and nervous tissues ; all other tissues may be regarded as the servants of these. In order that the nervous tissues may be protected from injury, and in order to support and hold together the delicate parts of the body, there is provided a firm frame-work of bones known as the *skeleton,* and the masses of binding fibres known as *Connective tissues.* The nervous and muscular structures cannot function their part without food. Food is taken in and prepared by the *Digestive system* so that it can be carried by the blood in the *Circulatory system* to the various parts of the body then transformed into work. In addition to food, air is required to form chemical changes in the body, and this is taken in the *Respiratory system.* After the food and air have done their work certain waste matters are left, and these are got rid of by means of organs forming the *Excretory system.*

Therefore, the human body is governed by the nervous and muscular systems, the skeleton and connective tissues, the digestive, circulatory, respiratory and excretory systems. To keep up the whole machinery of the human body, proper quality and quantity of food must be supplied and a proper method of physical exercises also must be taken up in order that the income of the body may balance with the expenditure. It is at the time of sleep, by rest and relaxation that body is built, and hence the same also is very essential. Clean habits and tranquil mind are the fuehrer of the body for proper health and strength. It is a very important thing to understand the merits and demerits of various methods of physical activities and make use of them intelligently as required for the particular individual physical condition so as to get the required result. It is not in the excessive development of certain group of muscles, or in the proficiency of a given feat of strength that physical training consists, but in the general excellence of every department of the muscular system so as to attain a perfect relation of the muscles to the functions of organic life and to the activity and discipline of the

brain. Hence, exercise of all parts of the body is an absolute necessity for the maintenance of perfect health. A steam-engine, if allowed to stand idle, will get rusty and out of order. Similarly, the human body by not having proper work to do, will become too fat, and the muscles will waste and get flabby, the heart will become weak, the circulation slow and feeble, the blood will not be properly aerated, poisonous products will accumulate in the body, the complexion will be pale, and the intellect dull. To improve these conditions, the systematic and scientific physical exercises are the only remedy. The effect of regular muscular exercise is to expand the lungs, to increase the amount of oxygen taken in and the carbon-di-oxide breathed out; the sweat is increased and so exercise helps to get rid of waste matters from the body. The heart is strengthened, the blood is more aerated, the muscles grow larger, harder and more active. The appetite and digestive powers increase, the body is kept warm, and the brain is more active and bright as a result of general health getting improved. One feels all the thrills in physical health, strength, and all round development.

To simplify, the whole system of anatomy as required for the purpose of physical exercises, the body can be conveniently divided into six important parts ,and a few minutes' systematic exercise for all these parts is sufficient enough to keep up the body-mechanism in good condition,

The important parts of the body are :—



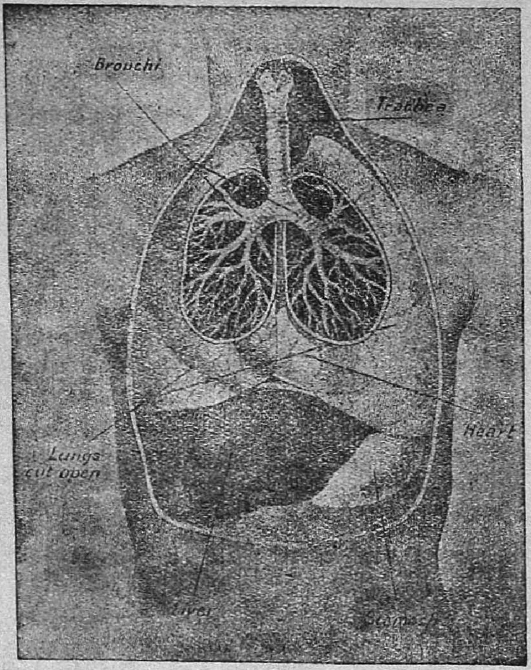
Is your blood stream properly balanced, as above? If so, you are one of the exceptions

Blood and Blood Circulation.

1. **Face or Neck and Above Neck.**— These include: (1) the head which is the power house of human mechanism and the contoller of the nervous system; (2) the eyes which give vision; (3) the nose which regulates respiration; (4) the mouth including teeth and tongue which grinds and tastes foods and (5) the neck a very important nervous junction connecting the head and the trunk. The most important thyroid glands which regulate growth in human being are situated here. A well developed neck is a sure indication of health and virility. Buttressing the neck on both sides are the muscles called the Trapezius.

II. **Chest or Pectorals (Upper Part of the Trunk).**—This is the seat of the lungs and heart, the nut-shell of life. The very longevity of life is

depending upon the lungs. The more the capacity of the lungs, the longer will be the span of life. Heart is nothing but a muscular mass which, day in and day out, is pumping out blood for all other parts of the body. The lesser the blood circulation in the body, the more anæmic is the condition



Human Heart.

The more the capacity of the lungs, the longer will be the life-span.

there. A deep broad chest adds majesty to the personality of the man.

III. **Hands: (Upper and Lower Arms).**—In the upper arm is situated the biceps in front and the triceps at the back. A fully developed biceps, triceps, forearms and deltoids indicate one's might and strength which is more essential in a war time.

IV. **The Trunk of the Body.**—This contains the very important mid-section of the body wherein lies the digestive, excretory and other organs. The spinal cord which runs from the neck to the mid-section is the backbone for the human frame. The Latissimus dorsi muscles below the arm pits, the shoulder blades, the ribs etc., are situated in the upper trunk of the body. In the lower part of the trunk, wherein comes the mid-section of the body, the small of the back, the hips, the waist line, the abdomen with its internal viscera, liver, kidney, excretory and reproductory organs and glands are located. It is round the waist, hips and abdomen that people generally get extra fat—a burden to carry. The small of the back is the fulcrum of the whole body. The first sign of weakness and oldage is felt in this region. Therefore, this part of the trunk where the vitality of man or woman vibrates, must be very well guarded.

V. **Thighs.**—These are the pillars of the whole human structure. These have the biggest muscles in the body and are thrice as strong as the hands. All care must be given to see that they are real pillars of the house.

VI. **Calves (Lower Legs).**—Calves including lower legs, are the foundation for the human house; therefore, this foundation must be well based.

"Is your husband a book-worm?"
"No, just an ordinary one."

FIRST-AID IN NECK AND BACK INJURIES

THINGS A LAYMAN SHOULD AND SHOULD NOT DO.

WHEN the victim of an accident suffers a spinal injury, the chances are that he will be first seen and moved by laymen. The layman's first impulse is to pick up the patient and bundle him into an automobile, not realizing that the first movements of the injured person may cause further damage to the spinal cord, causing additional irreparable paralysis and destroying any remaining function which may have survived the initial injury.

The medical profession feels very strongly that the lay public must be instructed in the proper method of handling suspected injuries of the spine, so that further damage in moving and transportation may be avoided.

Causes. — Automobile accidents, falling from heights, and diving into shallow water form the chief sources of fractures of the spine and injuries to the spinal cord. Crushing injuries, such as those caused by the fall of roof in buildings and mines are also common. These injuries result in fracture and dislocation of one or more vertebrae which may range from very slight chips of bone to crushing and displacement of the vertebra and damage to the spinal cord. Such injuries are usually handled first by people with no First Aid training. Permanent paralysis may result by wrong handling, which by proper care might be prevented.

Symptoms.—If the victim is conscious, he may tell you where he is hurt and what happened to him. Pain in the neck or back may be the only symptom. Nevertheless, always ask him whether he can move his feet and toes and hands and fingers. Never lift an injured person without first asking if he can move his feet or hands. If he cannot open and close his fingers rapidly, or grasp your hands firmly, his neck is probably broken; if he can move his fingers but not his feet or toes, his back is probably broken. In either case, the spinal cord may be injured but may not be severed.

Do Not Lift His Head even enough to give a drink of water. *Do not let him try to rise or sit up*, or the injury to the spinal cord may become complete, and permanent paralysis may result. If the victim is unconscious, and a spinal injury is suspected, handle him as if the neck were broken. Shock is usually severe. The following procedures are indicated to prevent further damage to the spinal cord.

Broken Neck.—If the victim with a broken neck must be moved, get a door, a shutter, or a wide board, and place it *beside* the victim with the end *at least four inches beyond the top of the victim's head*. The board should be at least fifteen inches wide, and five feet or more in length.

(*a*) *If the victim with a broken neck is on his back*, one person should kneel

Handling the patient is a delicate art by itself.
Picture shows conveying the patient to a stretcher.

above the victim's head, and holding the head between two hands, steady

it so that the head, neck and shoulders move as a unit with the body without bending. One or more other persons may then grasp the victim's clothing at the shoulders and hips, and carefully slide the victim sideways onto the board or door, so that he stays *face upward*, arms at sides, *head*, trunk and extremities on the board. *The head must not be raised or the neck bent forward or sideways.* The arms may then be folded over the chest, and held together by safety pins or bandage. Several straps or bandages should be placed around the victim in place during transportation. No pillow should be placed under the head, but sweaters, clothing, or improvised small sand bags may be placed against the sides of the head to keep it from rolling to the side during transportation. The chin should be up. The board with the victim on it may then be lifted onto a blanket or a stretcher, and carried by two or more bearers.

The patient being placed on a stretcher and about to be carried to the nearest First Aid centre.

(*b*) *If the victim with a broken neck is found lying face downward,* a door or board should be placed beside him as described above, and the arm on that side extended above the head. The person kneeling at the head must firmly grasp the victim's head at the sides, the hands covering the ear and the angle of the jaw. Then as the victim is rolled on to the board, his head must be steadied and kept in line with the body, as he is turned to the *face up* position. Moderate traction may be exerted with the hands holding the head, as the victim is rolled on to the board by one or more assistants kneeling at the side of the board. The head and trunk must be turned in unison. *Under no circumstances must the head be lifted forward or backward.*

Broken Back.—When the back is broken, get a door, shutter, or similar wide board, and place it beside the injured person so that it extends several inches beyond the level of the top of the victim's head.

(*a*) *If the victim with a broken back is on his bach,* raise the arm on the side toward the board so that it extends straight above the victim's head. Several assistants then kneel alongside the board opposite the victim, and reaching across the victim, grasping his clothing on the far side, they roll the victim slowly and gently toward themselves so that he lies *face downward* on the board. If a door is used, the assistants may kneel on the door, leaving space to roll the victim toward them. In making this roll, the body *must be moved as a unit,* without twisting or jerking, and with no bending of the back. One forearm may then be bent to lie beneath the victim's head. Two or three persons can turn over the injured better than one alone, and if other persons are available, one should kneel at the head and steady the victim's head as he is rolled over, while another steadies the feet. A blanket stretcher may be used in place of the door or board, if necessary.

Where victims must be moved a long distance, or through difficult passages, and there is available material, a frame should be made by nailing boards together. Each long board is padded with a folded blanket. The victim is carefully placed on this

frame as herein described and tied to it by bandages or strips of material.

If no door or board or poles are available, a blanket may be folded lengthwise, placed beside the victim, and he may be rolled as described above on to the blanket. Four bearers (two if necessary) may then grasp the blanket *at the level of the shoulder and knees*, and the victim is then lifted *in* the blanket on to a stretcher, or to a place of safety, remaining face downward. Care must be taken to support the head so that it does not sag forward in lifting.

(b) If the victim with a broken back is found face downward, the door or board may be placed beside him and by grasping the clothing on the near side, the victim is drawn sideways onto the board, remaining *face downward*, one person guarding the face. If no door or board is available, roll a blanket tightly from one side to the centre line, place it beside the victim with the roll toward his body, then several assistants kneeling on the opposite side of the victim can roll him up to a 45° angle so that the rolled blanket can be pushed in under the victim. He is then gently rolled back the other way so that the rolled half of the blanket may be unrolled and he may then be lifted onto a stretcher as decribed above, keeping him *face downward*. Several straps or bandages should be placed around the victim and the board or stretcher and secured, to hold the victim in place during transportation.

Broken back victims should be lifted on a rigid support if possible. The blanket lift may be safely used in emergencies when a rigid support is not available or when it is imperative to move a victim quickly from a position of danger.

General Safeguards.—If the victim is found on his side, or in a twisted or crumpled position, he must be carefully straightened out. With one person at the head and one at the feet, a third person may roll him on-to his back if the neck is broken, or on to his face if the back is broken.

Although there may be no symptoms, if a broken back or a broken neck is suspected, handle the victim as if he had a fracture of these parts. If unconscious, the victim should be handled as if his neck were broken. If both neck and back are broken, handle as a broken neck.

The gratest care must be used in transporting these cases to avoid any jolt or sudden stop. An ambulance should be obtained if possible, and the driver must be cautioned to go very slowly and carefully.

Ambulance Transportation.—The above recommendations are intended *primarily* for the lay public and to bring the patient to the stretcher rather than have the patient picked up and carried in a sitting posture to a waiting automobile. If a stretcher is immediately available to bring to the patient, then the following recommendations are made:

1. In back injuries remove one bar from the canvas stretcher, place the canvas stretcher beside the injured, roll the patient on to the canvas so that he lies face down. Pillows should then be placed beneath the patient's thigh and also beneath the shoulders so as to produce mild extension of the vertebral column.

2. Neck injuries. The recommendations previously made are adequate.

The injured should be thus transported to a hospital where X-ray apparatus is available and X-rays taken without removing injured from stretcher or blanket and without changing his position. Lateral injured should not be taken off the stretcher or blanket until the surgeon is ready to begin treatment.

The committee has considered the prone position in relation to injuries of the extremities, abdomen, chest, and head and in so doing has consulted with a number of general surgeons. The consensus is that the

above proposed method is not harmful to associated internal injuries or those of the extremities.—

(*Compiled from information specially supplied to the Safety First Association of India by the Committee on Fractures of the American College of Surgeons.*)—'*Safety News*'.

A Further Investigation of Breast-Feeding

By M. ROBINSON.

THE author, who is Assistant Medical Officer of Health for the City of Liverpool, has previously (Robinson, 1938) observed that a variation in the breast-feeding rate occurs from year to year.

In the present paper, an attempt is made to ascertain the factors responsible for this variation.

A re-assessment of the figures for the year 1937 on a monthly basis (according to the date on which the babies were born) showed that a fluctuation was still present and did not appear to be related to the seasons of the year.

The duration of breast-feeding was then calculated for 3,515 babies classified according to their position in the family, showing the percentages in each group (1st child to 8th child) weaned by the end of the 1st, 3rd, and 7th months, and those still at the breast during the 8th month. Families of 9 or more children were too few to be included. These figures showed no apparent effect of the child's position in the family on the duration of breast-feeding.

An investigation of the feeding of the only children of 300 mothers divided into different age groups failed to reveal any influence of increasing maternal age on lactation.

The histories of all the lactations of 1,369 cases were then collected, 369 being discarded as they had only one child. The remaining 1,000 were divided into the following four types:

Type I–All children fully breast-fed.

Type II–All children weaned early.

Type III–Older children weaned early, many of the younger ones fully breast-fed.

Type IV–Older children fully breast-fed. Many of younger ones weaned early.

Forty-one per cent. of mothers belonged to Type 1, 23.8% to Type II, 12.8% to Type III, and 22.1% to Type IV.

Type I mother was found in 43% of families of 2 children and this percentage varied only between 43% and 38% up to families of 7 children. Type II mother was found in 33% of families of 2 children and this percentage gradually declined to 8% in families with 7—*i.e.* Type II mother changed to Type III as the families grew larger. Type III mother is found in 13% of families of 2 children, and as the size of the family increases, the percentage varies between 10% and 18%. Type IV mothers were found in 11% of families of 2 children and increased to 39% in families with 7.

In another table, the author shows the percentage of the 4 types of mother occurring in the years 1936, 1937, and 1938, with the weaning rate for each of these years given as percentages weaned at the end of the 1st, 3rd, 6th, and 9th months, and it is seen that the fluctuation in the breast-feeding rate is attributable to the percentages of pregnancies occurring in the 4 types of mother in each year.

An *analysis* of the physiques of the

mothers shows that lactation is affected not by the gross size of the breasts but by the size and character of the nipples. Those with flat or small nipples are not as good feeders as those with average or large nipples.

Obese women mostly belonged to Type I, while masculine types (as judged chiefly by hair-distribution) belong predominantly to type II. Various other factors are considered and the following general conclusions are reached.

Breast-feeding is not affected by :– the seasons, position of child in family, age of mother, the size of breasts, antenatal secretion in breasts, return of menstruation, rheumatic endocarditis, simple enlargement of thyroid, pre-eclampsia and antenatal symptoms relieved by calcium.

Breast-feeding *is* affected by :— size and character of nipple, masculinity, obesity, morning sickness, pyelitis, severe varicose veins, breast abscesses, cracked nipples. — *Arch. Dis. Childh., March. 1942.*

PERSONAL PROTECTION AGAINST GAS

BY JAMES M. LANDIS,
Director, Office of Civilian Defense, Washington, D.C.

If people will remember a few simple facts, they will have no unreasonable fear of this agent.

War gases stay close to the ground, for they are heavier than air. To get out of a gassed area, simply walk against the wind or go upstairs.

Gas is irritating to the eyes, nose, lungs or the skin, but it is usually harmless if one does not become panicky but promptly leaves the gas area and cleanses oneself. A soldier must put on a mask where it is necessary to remain in the contaminated area, but a civilian can go up on the second or third floor and ignore it if the windows are kept closed.

If the gas should get on the skin, one can prevent it from doing much harm by sponging it off as quickly as possible with a piece of clothing, such as a handkerchief, and applying some neutralizing substances, followed by a thorough bath, preferably a shower with common laundry soap and water.

If one is indoors, stay there with doors and windows closed, and go to the second or third story. Stay out of basements. Turn off the air conditioning, and stop up fireplaces and any other large openings.

Some gases are spread as oily droplets which blister and burn the skin and eyes. If one is outside when gas is used, do not look up. Use clothing or a handkerchief to blot drops of liquid from the skin and throw the contaminated cloth away. Do not rub, as rubbing will spread the liquid. Then go to the nearest place where one can wash immediately with soap and water and cleanse oneself in the following manner :—

Remove all outer clothing outside the house, since gas can be transmitted to others from contaminated clothing. Put it preferably in a covered garbage pail.

Apply one of the following effective household remedies to the part of the skin that has been contaminated; chlorox or similar household bleach (for mustard); hydrogen peroxide (for Lewisite); paste or solution of baking soda if no peroxide or bleach is available. If one does not know the gas, use both peroxide and bleach. Keep bleach and peroxide out of the eyes. Do not waste time looking for these remedies; bathe immediately if they are not at hand.

After entering the house, wash the bleach or peroxide from the hands with laundry soap and water and then wash the face. Remove the underclothing, place it in a covered garbage pail and enter the bathroom.

Irrigate the eyes with large amounts of lukewarm 2 per cent solution of baking soda (1 tablespoon to a quart of water) or else with plain water. Use an ordinary irrigating douche bag or an eye irrigator. If one does not have these, let plain warm water pour into the eyes from the shower, washing them thoroughly. Do not press or rub the eyes.

Lastly, take a shower, using laundry soap and hot water. If the nose and throat feel irritated wash them out also with baking soda solution.

If the chest feels heavy and oppressed, if one has any trouble in breathing or if cigaret smoke becomes distasteful, lie down and stay perfectly still until a doctor comes.

If blisters develop, do not break them, and call a doctor.

Remember:

Soldiers require gas masks because they must remain in the contaminated area. Civilians can get out of the gassed area or get above the level of the gas, where they do not need gas masks or protective clothing.

Injured persons who are gassed require decontamination before they can be admitted to hospitals. All other civilians can best prevent any serious injury by promptly helping themselves in the manner outlined, using a kitchen or bathroom, laundry soap and water, and a few materials found in every household.—*Jour. A. M.A. July 11, 1942.*

WHY DO MEN SMOKE?

NICOTINE is a most delusive drug. The American aborigines smoked because they thought it gave them a glimpse of unreality—a peep into a spirit world, in which they believed. The average American smokes because he has been made to believe that it is a great source of pleasure—so great a source that he can afford to spend enough money in a few years in this form of selfish absorbent to pay for a home, or send a boy through college, or carry a life insurance policy. But this is all deception. At least, this is the case with the average smoker. The real fact is that the average smoker smokes because he is uneasy, uncomfortable, sometimes in real distress if he does not smoke. The habitual smoker suffers all the time when not under the influence of nicotine, from the damage that smoking has done him. He has difficulty in concentrating his mind. He cannot focus his thinking in such a way as to form a clearly defined opinion, so he has trouble in making up his mind what to do or when to do it. In other words, he is "rattled."

Ask the smoker, "Do you smoke in the dark?" Almost invariably the reply will be, "Oh, no, nobody smokes in the adrk."

Then you ask him why not, and the answer will be, "Well, I hardly know; I never thought of that before. I guess it is because I do not see that little curl of smoke going up," making it evident that the sight of the ascending smoke is practically all the pleasure the smoker gets, or seems to be a part of it. And you will be entitled to raise the question, "Are you getting enough returns from your pipe, cigar, or cigarette to balance the cost?"

Prof. Raymond Pearl's research, strongly confirmed by his own experience, proved that smoking notably shortens the life of the average smoker at least ten or twelve years. Evidently, the smoker, as Benjamin Franklin would say, "pays too much for his whistle."—*Good Health.*

Topics from Medical and Health Periodicals

Milk

MILK is declared to be in a class by itself. The protein it contains has a high biologic value. Cows concentrate calcium and the vitamin riboflavin in their milk. They return the carotene of their food mainly as performed vitamin A, which in this form is better absorbed by human beings. Milk cows are by far the most efficient converters of vegetable food-stuffs into valuable food for man's consumption. In times of shortage, they are the only animals that should be allowed to compete with human beings for food.— *Good Health.*

Prolonging Our Days

THE best assurance of a long life, said Dr. Oliver Wendell Holmes, is a wise choice of ancestors. Since this is impractical, other measures must be adopted. Dr. H. Vern Soper (*Medical Record*) places great stress on the avoidance of such emotions as fear, worry, indecision, anger, and others that bring on nervous tension. Highly wrought persons are likely to be excessively active physically, and thus accentuate the mischief. High blood pressure is a likely accompaniment. Tissue exhaustion, infiltration of fat and loss of elasticity of fibrous tissue result.

Adequate nutrition, proper exercise and sufficient rest fight such tendencies. Probably most people have some sort of foci of infection, whether in the teeth, tonsils, sinuses or elsewhere. The hourly absorption of poisonous substances from these sources year after year is bound to make definite changes in the body tissues.

Insurance statistics indicate that old people who receive an annuity live longer and are happier than the average. The worry of being destitute and not wanted will contribute to ill health.—*Good Health, U.S.A., June, 42*

Too Much Food Will Ruin Us

WE have heard much of recent years in America about malnutrition and undernourishment, but now comes a University of Chicago physiologist, Dr. Frederick Hoelzel, who says America should concern herself much more over her well-fed millions than the under-fed. He says that over-eating does more damage to our national health than does undereating. "The Roman banquet probably sealed the fate of the Roman Empire, and French food and wine were very likely factors in the fall of France," Dr. Hoelzel asserts. "Too much food, or excessive catering to the appetite, can weaken an empire just as surely as it can ruin an individual."

Iconoclastic Dr. Hoelzel also declares that, despite the importance of vitamins, an aggressive warfare against overnutrition is more important in America than a campaign to enrich our foods by the addition of vitamins. —*Good Health, U.S.A., June, '42.*]

Dr. Kellogg's Health Rules

1. Become posture conscious. Don't slump when sitting or standing.
2. Use the whole chest in breathing. Avoid chest constriction in sitting and working postures. Avoid clothing which constricts breathing.
3. Work, play, read, study, rest and sleep in the open air as much as possible.
4. Take sun baths at least once a week of sufficient duration to burn the skin slightly. In winter employ artificial sunlight.
5. Take an air bath and a water bath daily.
6. Eat natural foods, especially fruits, nuts, vegetable and greens. Get enough bulkage. Masticate thoroughly.
7. Avoid refined sugar, refined flour products, and excess of protein.
8. Use salt sparingly. Avoid hot condiments such as pepper, mustard, etc.
9. Beware of overeating and overweight.
10. Use no tea, coffee, or cold drinks.
11. Drink no alcoholic beverage.
12. Use no tobacco.
13. Drink 3 or 4 pints of water daily.
14. Secure a complete bowel movement after each meal.
15. Do enough hard work or exercise each day to produce fatigue and perspiration.
16. Learn to relax physically and mentally.
17. Sleep eight hours every night.
18. Take regular recreation.
19. Learn to conquer fret and worry. Keep sweet, cheerful and optimistic.
20. Serve God and humanity with singleness of purpose and ardency of spirit.—*Gd. Health.*

Business Men Die too Soon

A MAYO physician, who specializes in the ailments and diseases of American business men, recently told the American Association of Industrial Physicians and Surgeons that eating too much, smoking too much, drinking too much, working too much, resting too little, and playing too little, are the factors responsible for so much heart disease, circulatory disease, and kidney disease among business men.

This physician, Dr. Harold C. Habein, furthermore says that the present war, with its strain upon the business men of our nation, will cause a great increase in high blood pressure, hardening of the arteries, and coronary thrombosis, unless our business-men drastically revise their living habits. Dr. Habein warns that these lethal diseases are claiming more men of younger age now than ever before.—*Good Health, U.S.A.*

Civilian Protection Against Poison Gas

EVERY civilian is provided with a respirator for protection against poison gas and special ones have been provided for infants. At the time of the air raid respirators were regularly carried, but with their almost complete cessation masks are seldom seen in the streets. However, after the statement that an attack with poison gas on the Russians is projected, people are warned by the government to test their respirators and see that they are in order. A steady overhaul of anti-gas precautions has taken place in the last few months. Local authorities and civil defense workers have been busy checking and examining respirators issued to civilians. Great importance is attached to the injunction to practice wearing masks for a short time each day. It has been found that some masks have become faulty, mainly because the owners screwed them into containers they were never intended to fit. The warning is given again "Always carry your gas masks." Some concern has been expressed as to the possible discovery and use by the enemy of some new and more deadly gas. But an official of the Ministry of Home Security has stated that there is no gas known to scientists as a possible war gas against which the civilian respirators are not a protection.—*Jour. A. M. A., July 11, 1942.*

Mental Reactions to Air Raids

PSYCHIATRIC casualties following aerial bombardment have been less than expected. Wilson reports that of 697 civilian patients brought to the first aid post 134 were suffering from acute emotional disturbance, hysterical paraplegia and stupor due to fright and anxiety. All left the hospital within twenty-four hours and only 6 returned. They were all told that their reaction was due to fear, which is shared by all persons, and that it was important that they should return to their normal work and resist the temptation to exaggerate the experiences through which they had passed. The psychopathic traits of 63 patients suffering from psychiatric symptoms due to air raid stress were two and a half times as frequent as those of 102 nonservice normal patients taken at random from the surgical outpatient department of the same emergency medical service hospital. The controls were far more conscious of the fear excited by aerial bombardment than the psychiatric patients. Shelter phobia was present in 15 of the 102 controls. The admission and acceptances of fear is a safe-guard against breakdown under acute stress. Total denial of fear is a poor prognostic sign. The anxiety that requires attention at the first aid post may be aided by dispelling fear by reassuring the outpatients that their reaction is natural. For conversion symptoms—dyspepsias, inframammary pain and head-aches—it is probably important to convince these patients at the first sessions of the obvious connection between the symptom and the acute danger or terror. When any service must recruit persons with anxieties, reasonable timidity and anxiety should be allowed if it is associated with those opportunities of corporate responsibility and wholesome competition which strengthen individual morale. To prevent hysteria, civilian defense workers must have the capacity for arduous work.—*Jour. A. M. A., July 11, '42.*

Democracy

DEMOCRACIES have within them seeds of failure as well as of greatness. Where there is no rule by force, neglect keeps open house. More radios, more telephones, more automobiles are not the gauge of a nation's greatness, but only of its material prosperity. A superfluity of luxuries and labor saving devices sap the sturdy body of strength and fortitude and distort the scale of values. Every civilization, when it grew to great wealth and luxury fell before the onslaught of more robust, more spartan races. Let us be warned by the present conflict in which we find ourselves engaged. We do not wish to lose our democratic way of life, but unless we infuse into our national philosophy some of the simplicity and hardiness, some of the will to go the hard way for the sake of a greater good which dignified our ancestors on this continent, we too shall experience the fate of all degenerate races.—*Good Health, U S.A.*

Somatic Peculiarities of the Japanese

WHILE not strongly developed physically, the Japanese people are capable of great exertion and endurance. Notable somatic peculiarities are the divided malar bone (os japonicum), the low, broad upper jaw: without canine fossae, and the so-called "Japanese knee." In general physical conformation the males of the better class have a decidedly feminine or even childlike cast.

The average height of the male is 5 feet, 3½ inches; that of the female 4 feet, 10½ inches.

The ratio of height of head to length of body is greater than in Occidental peoples. In the latter the ratio is 1/8 to 1/7; the Japanese ratio exceeds the latter figure.

The legs are short relatively to length of trunk, and this can not be ascribed entirely to kneeling, as the working classes pass most of their time standing and yet show the same characteristic.

The Japanese eyeball is like that of the Occidental but the orbit is comparatively small and shallow, and the supra-orbital ridges only slightly marked, so that the eye is not deeply set. In profile, the forehead and upper lip usually form an unbroken line. The shape of the open eye, as modelled by the lids, is oblique because of the higher level of the temporal canthus. The nasal canthus is partly or entirely covered by a fold of the upper lid continuing more or less into the lower lid. This fold often covers also the whole free rim of the upper lid, so that the insertion of the eyelashes is hidden and the opening between the lids is so narrowed as to disappear altogether whenever the individual laughs. The eyelashes are short and sparse, but also they converge instead of diverging, and thus are nearer together than in Occidentals. The cheekbones are prominent and there is a marked paucity of facial hair. The face is broad, the mouth wide, the nose flat, and the neck short.—*Medical Times.*

Four Inches Less Waist

THE circumference of American Women at the waistline has decreased nearly four inches in the last ten years, according to the findings of America's dress and gown designers. This has come about, not by corseting or other constrictive measures, but by intelligent dieting, scientific exercising and calisthenics.

This decrease, particularly on the part of women 30 years of age and older, is a very beneficial one, for with most adults the shorter the waist line the longer the life line. Perhaps the war, with its rationing of sugar and its increased physical activities for women, will further add to their symmetry, beauty and life expectancy.—*Good Health, U.S.A.*

Ill-health from Mental States

EMOTIONAL states such as those due to domestic or business troubles may result in disturbances of bowel action, writes Dr. J. H. Geddes in the *Canadian Medical Association Journal.* The colitis may cause marked constipation or diarrhea. In one instace, looseness of the bowels attacked a young man when his wife became seriously ill. She recovered in two weeks, but his trouble continued for a year. Colitis may bring on a variety of symptoms, gas and abdominal distress in some form are most common. Headache, loss of energy, dizziness, nervousness loss of appetite and nausea may occur.

If the patient is working too long hours or burning the candle at both ends in other ways, attention should be called to this. If he is unhappy in his work, an attempt should be made to change to a suitable occupation. Plenty of sleep and a mid-day rest are important. Two vacations a year are better than one.—*Good Health.*

Prevention of Toxæmia in Pregnancy

DR. C. G. Galloway lays down five principles aimed at preventing toxæmia in pregnancy. These are :—

(1) *Elimination of all physical defects and foci of infection,* such as infected teeth and tonsils.

(2) *Attention to the patient's weight.* Women who gain weight too rapidly and too greatly are liable to suffer from toxæmia. Weight may be diminished by attention to diet, diminished salt in take and magnesium sulphate twice weekly.

(3) *Consideration of blood pressure.* This should not rise above 130 m.m. Hg If it does and goes on increasing, steps must be taken to remedy this condition.

(4) *Condition of the urine.* This should be examined for albumen, sugar and casts.

(5) *Attention to diet.* Sodium salts should not be taken. The patient should not drink milk unless she likes it. It ranks high among those foods which tend to cause gastric symptoms. There is no necessity to restrict protein foods unless there is evidence of liver trouble and nitrogen retention. In some cases it may seem advisable to give the patient additional calcium, iron or vitamins.—*M. W.*

Prophylaxis of the Common Cold

DR. S. C. Ray (*The Antiseptic.* Feb., 1942) says that children who are prone to nasal catarrh should, if required, have adenoids removed. In adults any chronic nasal affection should be remedied, especially any source of nasal obstruction. Thin and ill-nourished people should take cod liver oil and a diet containing an excess of fat. Local chilling of the body, particularly of the feet, especially if associated with fatigue, is liable to be followed by a head cold. Consequently, in early winter and spring, warm clothing is most essential as a prophylactic measure. Sleeping with open windows is beneficial. Excessive smoking, especially indoors, appears to favour the development of a cold. The most effective prophylactic measure, however, is to avoid contact as far as possible with persons suffering from cold.—*Medical World.*

Myopia

AS myopia cannot be cured, it should be prevented by adopting the following rules in case of a growing student :

1. The younger the child the larger should be the types of books read by him.

2. The light should fall on the object of study from behind the head and over the left side of shoulders.

3. The head should be kept straight during study and never in an oblique or stooping position at a distance of 13 inches from the object of study which should rest on a sloping desk, the body resting on a stool or bench with back-rest.

4. A child should never be allowed to read bending over his work in bed or ground or in a moving vehicle or lying on back.

5. Study should be carried on as far as possible in daylight. Night reading in artificial light is to be avoided.

6. The time of study of a child should depend on his age and health. At 12 years, studying three hours a day in divided periods may be allowed. Younger children should not devote more than 2 to 3 hours a day to study, in periods of half an hour of continuous use.

7. The parent or guardian of a child should at once get the advice of a qualified ophthalmologist as soon as the child develops myopia, which is detected by the following events :—(*a*) holding book nearer to eye than 13 inches, (*b*) cannot see black-board at a distance of 20 feet in the class room, and (*c*) going too near the clock to see time.

8. The eyes of every child should be examined before he is sent to school.

TREATMENT.—1. Errors of refraction are to be corrected by glasses prescribed not by an optician but by a qualified ophthalmologist and worn constantly.

2. Health should be improved by nourishing diet, plenty of fresh air, out-door exercises and medicines prescribed by a qualified physician.

3. If there is a tendency for myopia to increase, all near work should be stopped.

4. For education of children with high myopia a special school for myopes should be established.—*Calcutta Medical Journal.*

Pyorrhea

THE real cause of pyorrhea is the lack of sufficient amounts of vitamins B and C in the diet. Infection would never start in the gingival margins if the gums were properly nourished at all times. A child who is blessed with a good set of teeth in the beginning and who eats a diet that is properly balanced all his life will never need artificial teeth.

A person with a healthy set of teeth is usually healthy in every other way.

There is a lack of precise teaching, both of physicians and of the public, of the necessity for consuming a balanced diet at all times.

If sufficient attention were given to this subject, and if properly balanced diets were consumed by the entire public during the full length of life, I believe that most of the painful chronic conditions of adults would be prevented. To be healthy and comfortable during the last forty years of life one must eat correctly during the first forty years.—I.C.—*Jour. P.M.A., August, 1941.*

Cancer of the Bladder—its Diagnosis

BLOOD in the urine is the most important early symptom. This may be caused by other conditions, but anyone who passes blood in the urine should have an examination to ascertain the cause. It is not unusual in cancers of the bladder, for the patient to have a long interval between the first bleeding and the second. This gives the cancer time to develop (sometimes beyond the point where it might be cured). The importance of immediate, thorough examination is obvious.

Annual examination of the urine may show the presence of red blood cells, and may lead to the diagnosis of cancer before gross bleeding occurs. Cancer of the kidney may develop into sizable masses in the side just below the ribs. An unusual mass in the abdomen, especially in children, may be the first symptom of malignancy. Painful and frequent urination, loss of weight, and pain in the back are frequent symptoms of cancer of the urinary tract.—*Medcal Digest.*

The Discovery of Symptomless Pulmonary Tuberculosis

TUBERCULOSIS of the lungs begins without any warning to the patient. By the time patients voluntarily come for treatment, the disease is in an advanced stage, and such patients have perhaps already infected numerous other people.

The only method of detecting tuberculosis before it produces symptoms is by X-Ray examination of the chest. This is a simple, painless and rapid procedure. By modern methods it can be carried out for large numbers of people at one time. We need more X-ray examinations, particularly of those in the teens and the early twenties, and we need more X-ray examinations of those apparently healthy. The ideal would be for every young person to be examined by X-rays on leaving school,and at intervals during early adult life. Those who enter the force can most easily be included in such a scheme, but all—both men and women—ought to be re-examined from time to time. The entry into the services of Government and local authorities wound be a good opportunity to augment regular medical examination by X-ray, as a safeguard to the individual and also to fellow-workers. The early discovery of active disease may not only mean recovery for the patient in a shorter space of time, but safety for others in contact.

Boys and girls in secondary schools, technical schools, colleges and universities are at a period of lifo where physical and mental strain is great, and the risk of tuberculosis serious. The disease at these age periods shows a tendency to increase. Regular X-ray examinations are advisable.—*Med. Officer, 21-5-42*

Ten Timely Tips for the Dyspeptic

IT is worth remembering that digestive upsets arise from psychological as well as physiological causes. Consequently, the defeat of dyspepsia needs careful thought as well as dietetic discipline. Here, then, are ten timely tips for the dyspeptic.

1. *Avoid all drinks with meals.* If you must drink, do so before the meal, preferably a wine-glassful of tonic, vegetable or fruit juice. This allows better concentration of gastric juices to digest food. Take other drinks between meals.
2. *Avoid hard-to-digest foods.* These are chiefly fried foods, greasy, rich fare, cakes, pastries, highly-spiced sauces, condiments, and unbalanced refined foods such as white flour breadstuffs, polished rice, sago, etc.
3. *Choose diet from whole foods.* Wheatmeal bread, whole grain cereals, vegetables, milk, eggs, fruit (when possible), dried peas, beans, lentils, macaroni, spaghetti, and nuts provide good variety. Stimulating meat foods and essences must be avoided, also alcohol.
4. *Toast all bread.* This should be done by toasting the bread thoroughly in the oven. The bread is partially dextrinized and made more easily digestible. It also encourages thorough mastication.
5. *Eat a salad a day.* Preferably of three vegetables chosen from celery, grated carrot, shredded cabbage or sprouts, watercress, cucumber, lettuce, spring onions, tomatoes, radish, dandelion leaves, parsley, mint, etc. Balance with grated cheese or nuts or rissole, and toast.
6. *Eat small, well-balanced meals.* Each meal should include either some fruit or some vegetable fare,some cereal (or potao if a cooked vegetable meal);and a serving of a protein food (cheese, pulses, nuts, egg) in a savoury dish.
7. *Eat only when really hungry.* Short fasts of twelve to twenty-four hours are beneficial, provided the body functions and eliminations are adequately maintained.
8. *Eat slowly.* Chew food well until almost tasteless. Then stomach, duodenum, and liver can perform their parts.
9. *Take a few grains of charcoal after each meal.* This may be taken as a charcoal lozenge (obtainable from any good chemist shop) or a charcoal biscuit (Health Food Store).
10. *Relax mentally throughout mealtimes.* Get the utmost enjoyment from your food. Banish worry, radio, newspaper and books from your mealtime. After the meal, rest and relax for fifteen minutes. S. B. WHITEHEAD, D. Sc.—*Good Health (Lond).*